CONTENTS OF VOLUME 13

JANUARY 1989 VOLUME 13 NUMBER 1

ACC ANNIVERSARY SEMINAR
Suzanne B. Knoebel, Guest Editor

1 **Introduction.** *Suzanne B. Knoebel*

3 **Why Celebrate?** *E. Grey Dimond*

5 **An Editor's Account of the History of the College.** *Simon Dack*

COOPERATIVE STUDIES

12 **Thrombolysis and Angioplasty in Myocardial Infarction (TAMI-1) Trial: Influence of Infarct Location on Arterial Patency, Left Ventricular Function and Mortality.** *Eric R. Bates, Robert M. Califf, Richard S. Stack, Lynne Aronson, Barry S. George, Richard J. Candela, Dean J. Kereiakes, Charles W. Abbottsmith, Linda Anderson, Bertram Pitt, William W. O'Neill, Eric J. Topol and the Thrombolysis and Angioplasty in Myocardial Infarction Study Group*

19 **Plasminogen Activator Italian Multicenter Study (PAIMS): Comparison of Intravenous Recombinant Single-Chain Human Tissue-Type Plasminogen Activator (rt-PA) With Intravenous Streptokinase in Acute Myocardial Infarction.** *Bruno Magnani for the PAIMS Investigators*

27 **Antimyosin Imaging in Acute Transmural Myocardial Infarctions: Results of a Multicenter Clinical Trial.** *Lynne L. Johnson, David W. Seldin, Lewis C. Becker, Norman D. LaFrance, Henry A. Liberman, Christopher James, Jeffrey A. Mattis, Richard T. Dean, John Brown, Andrew Reiter, Valerie Arneson, Paul J. Cannon, Harvey J. Berger*

CLINICAL STUDIES

36 **Elderly Patients With Hypertrophic Cardiomyopathy: A Subset With Distinctive Left Ventricular Morphology and Progressive Clinical Course Late in Life.** *Jannet F. Lewis, Barry J. Maron*

46 ***Editorial Comment*** **An Acquired Disease Component in Hypertrophic Cardiomyopathy: New Clinical Clarifications.** *Norman Krasnow*

48 **Radionuclide Angiographic Assessment of Left Ventricular Diastolic Filling in Amyloid Heart Disease: A Study of Patients With Familial Amyloid Polyneuropathy.** *Minoru Hongo, Tadashige Fujii, Jiro Hirayama, Osamu Kinoshita, Masao Tanaka, Shinichi Okubo*

54 ***Editorial Comment*** **Diastolic Dysfunction in Amyloid Heart Disease: Restrictive Cardiomyopathy or Not?** *Jonathan F. Plehn, Bruce J. Friedman*

57 **The St. Jude Valve Prosthesis: Analysis of the Clinical Results in 815 Implants and the Need for Systemic Anticoagulation.** *Mary Lee Myers, Gerald M. Lawrie, E. Stanley Crawford, Jimmy F. Howell, George C. Morris, Jr., Donald H. Glaeser, Michael E. DeBakey*

63 **Aortic Regurgitation: A Common Complication After Surgery for Hypertrophic Obstructive Cardiomyopathy.** *Zion Sasson, Tim Prieur, Yoanna Skrobik, John C. Fulop, William G. Williams, Mark A. Henderson, Cris Gresser, E. Douglas Wigle, Harry Rakowski*

METHODS

69 **Enhancement of Sympathetic Nerve Activity by Single Premature Ventricular Beats in Humans.** *William J. Welch, Michael L. Smith, Robert F. Rea, Robert A. Bauernfeind, Dwain L. Eckberg*

76 **Accuracy of Cardiac Output Measured by Continuous Wave Doppler Echocardiography During Dynamic Exercise Testing in the Supine Position in Patients With Coronary Artery Disease.** *Masahiko Maeda, Mitsuhiro Yokota, Masatsugu Iwase, Takashi Miyahara, Hiroshi Hayashi, Iwao Sotobata*

84 **Ultrasonic Integrated Backscatter Tissue Characterization of Remote Myocardial Infarction in Human Subjects.** *Zvi Vered, G. A. Mohr, Benico Barzilai, Carl J. Gessler, Jr, Samuel A. Wickline, Keith A. Wear, Thomas A. Shoup, Alan N. Weiss, Burton E. Sobel, James G. Miller, Julio E. Perez*

92 ***Editorial Comment*** **Ultrasound Tissue Characterization: Can the State of the Myocardium be Assessed Directly Yet Noninvasively?** *David J. Skorton*

95 **Transesophageal Doppler Color Flow Imaging in the Detection of Native and Björk-Shiley Mitral Valve Regurgitation.** *Meindert A. Taams, Elma J. Gussenhoven, Michael K. Cahalan, R. T. C. Roelandt, Lex A. van Herwerden, Hong K. The, Nicolaas Bom, Nico de Jong*

PEDIATRIC CARDIOLOGY

100 **Coil Embolization to Occlude Aortopulmonary Collateral Vessels and Shunts in Patients With Congenital Heart Disease.** *Stanton B. Perry, Wolfgang Radtke, Kenneth E. Fellows, John F. Keane, James E. Lock*

109 **Causes of Recoarctation After Balloon Angioplasty of Unoperated Aortic Coarctation.** *P. Syamasundar Rao, Mohinder K. Thapar, Farid Kutayli, Patrick Carey*

MORPHOLOGIC STUDIES

116 **Endomyocardial Biopsy in Hemochromatosis: Clinicopathologic Correlates in Six Cases.** *Lyle J. Olson, William D. Edwards, David R. Holmes, Jr., Fletcher A. Miller, Jr., Leonard A. Nordstrom, William P. Baldus*

CARDIAC PACING

121 **Combined Automatic Implantable Cardioverter-Defibrillator and Pacemaker Systems: Implantation Techniques and Follow-Up.** *Andrew E. Epstein, G. Neal Kay, Vance J. Plumb, Richard B. Shepard, James K. Kirklin*

132 ***Editorial Comment*** **Combined Automatic Implantable Cardioverter-Defibrillator and Pacemaker Systems.** *Seymour Furman*

REPORTS ON THERAPY

134 **Comparative Hemodynamic and Neurohormonal Effects of Intravenous Captopril and Digoxin and Their Combinations in Patients With Severe Heart Failure.** *Mihai Gheorghiade, Veronica Hall, Jeffrey B. Lakier, Sidney Goldstein*

143 *Editorial Comment* **Angiotensin-Converting Enzyme Inhibition for Congestive Heart Failure: Achievements and Potential.** *Ezra A. Amsterdam*

145 **Clinical Experience With Sotalol in Patients With Drug Refractory Ventricular Arrhythmias.** *Michael A. Ruder, Tamara Ellis, Cynthia Lebsack, R. Hardwin Mead, Nellis A. Smith, Roger A. Winkle*

153 **Treatment of Life-Threatening Ventricular Arrhythmias With Nonguided Surgery Supported by Electrophysiologic Testing and Drug Therapy.** *Chi-Sung Zee-Cheng, Nicholas T. Kouchoukos, John P. Connors, Rodolphe Ruffy*

163 *Editorial Comment* **Direct Surgery for Ventricular Tachycardia: Is Nonguided Misguided?** *John D. Fisher, Richard F. Brodman*

REPORTS ON HYPERTENSION

165 **Effects of Blood Pressure Changes on Development and Regression of Electrocardiographic Left Ventricular Hypertrophy: A 26 Year Longitudinal Study.** *Naoto Ashizawa, Shinji Seto, Kouei Kitano, Kyoko Toyama, Hideo Sasaki, Kazunori Kodama, Yutaka Hosoda, Katsutaro Shimaoka, Yoshisada Shibata, Kunitake Hashiba*

EXPERIMENTAL STUDIES

173 **Alterations in Serum Sodium in Relation to Atrial Natriuretic Factor and Other Neuroendocrine Variables in Experimental Pacing-Induced Heart Failure.** *Gordon W. Moe, Terrance P. Stopps, Carmella Angus, Christine Forster, Adolfo J. De Bold, Paul W. Armstrong*

180 **Effects of Ventricular Fibrillation and Defibrillation on Pacing Threshold in the Anesthetized Dog.** *Michael J. Reiter, JoAnn Lindenfeld, Charles M. Tyndal, Jr., Susan Breckinridge, David E. Mann*

185 **Prolonged Abnormalities of Left Ventricular Diastolic Wall Thinning in the "Stunned" Myocardium in Conscious Dogs: Time Course and Relation to Systolic Function.** *Martin L. Charlat, Padraig G. O'Neill, Craig J. Hartley, Robert Roberts, Roberto Bolli*

195 **Decreased Coronary Flow Reserve After Transient Myocardial Ischemia in Dogs.** *John M. Nicklas. Sanford J. Gips*

200 **Quantitation of Myocardial Perfusion by Contrast Echocardiography: Analysis of Contrast Gray Level Appearance Variables and Intracyclic Variability.** *Byron F. Vandenberg, Robert Kieso, Karen Fox-Eastham, William Chilian, Richard E. Kerber*

207 **Ventricular Defibrillation Using Biphasic Waveforms: The Importance of Phasic Duration.** *Anthony S. L. Tang, Seitaro Yabe, J. Marcus Wharton, Michael Dolker, William M. Smith, Raymond E. Ideker*

CASE REPORTS

215 **Shortening of Ventriculoatrial Intervals With Left Bundle Branch Block During Orthodromic Reciprocating Tachycardia in Three Patients With a Right-Sided Accessory Atrioventricular Pathway.** *Jeffrey M. Baerman, Robert A. Bauernfeind, Steven Swiryn*

SEMINAR ON IN VITRO STUDIES OF CARDIAC FLOW AND THEIR APPLICATIONS FOR CLINICAL DOPPLER ECHOCARDIOGRAPHY-II

David J. Sahn, Ajit P. Yoganathan, Guest Editors

221 **Fluid Dynamics Model of Mitral Valve Flow: Description With In Vitro Validation.** *James D. Thomas, Arthur E. Weyman*

234 **Doppler Color Flow Evaluation of Prosthetic Mitral Valves: Experimental Epicardial Studies.** *Michael Jones, Elling E. Eidbo*

241 **Spatial Velocity Distribution and Acceleration in Serial Subvalve Tunnel and Valvular Obstructions: An In Vitro Study Using Doppler Color Flow Mapping.** *Iain A. Simpson, Lilliam M. Valdes-Cruz, Ajit P. Yoganathan, H. W. Sung, A. Jimoh, David J. Sahn*

ACC/AHA TASK FORCE REPORT

249 **Guidelines for Ambulatory Electrocardiography.** *Suzanne B. Knoebel,* Chairman

SPECIAL SECTIONS

259 ACC News **President's Page: Who Represents the Cardiovascular Specialist?** *Anthony N. DeMaria*

261 **Letters to the Editor**

264 **Corrections**

FEBRUARY 1989 VOLUME 13 NUMBER 2

ACC ANNIVERSARY SEMINAR
Suzanne B. Knoebel, Guest Editor

265 **Molecular Cardiology: New Avenues for the Diagnosis and Treatment of Cardiovascular Disease.** *David R. Hathaway, Keith L. March*

CLINICAL STUDIES

283 **Acute Occlusion in Multiple Lesion Coronary Angioplasty: Frequency and Management.** *Georg Gaul, Jay Hollman, Conrad Simpfendorfer, Irving Franco*

289 *Editorial Comment* **Multilesion Angioplasty: Progress and a Plea for Proof.** *Thomas J. Ryan*

291 **Repeat Coronary Angioplasty: Efficacy of a Third Angioplasty for a Second Restenosis.** *Paul S. Teirstein, Craig A. Hoover, Robert W. Ligon, Lee V. Giorgi, Barry D. Rutherford, David R. McConahay, Warren L. Johnson, Geoffrey O. Hartzler*

297 **Determinants of Collateral Filling Observed During Sudden Controlled Coronary Artery Occlusion in Human Subjects.** *Marc Cohen, Warren Sherman, K. Peter Rentrop, Richard Gorlin*

304 **Patterns of Left Ventricular Dilation During the Six Months After Myocardial Infarction.** *Richmond W. Jeremy, Kevin C. Allman, George Bautovitch, Phillip J. Harris*

311 **Left Ventricular Shape, Afterload and Survival in Idiopathic Dilated Cardiomyopathy.** *Pamela S. Douglas, Robert Morrow, Alfred Ioli, Nathaniel Reichek*

METHODS

317 **Regional Myocardial Blood Flow and Metabolism at Rest in Mildly Symptomatic Patients With Hypertrophic Cardiomyopathy.** *Maleah Grover-McKay, Markus Schwaiger, Janine Krivokapich, Joseph K. Perloff, Michael E. Phelps, Heinrich R. Schelbert*

325 ***Editorial Comment*** **Myocardial Metabolism by Positron Emission Tomography in Hypertrophic Cardiomyopathy.** *K. Lance Gould*

327 **Left Ventricular Diastolic Function: Comparison of Pulsed Doppler Echocardiographic and Hemodynamic Indexes in Subjects With and Without Coronary Artery Disease.** *Marcus F. Stoddard, Anthony C. Pearson, Morton J. Kern, John Ratcliff, Denise G. Mrosek, Arthur J. Labovitz*

337 ***Editorial Comment*** **Left Ventricular Diastolic Dysfunction: Early Diastolic Relaxation and Late Diastolic Compliance.** *Richard B. Devereux*

340 **Determination of Cardiac Output in Critically Ill Patients by Dual Beam Doppler Echocardiography.** *David S. Looyenga, Philip R. Liebson, Roger C. Bone, Robert A. Balk, Joseph V. Messer*

348 **The Gorlin Formula Validated Against Directly Observed Orifice Area in Porcine Mitral Bioprostheses.** *John B. Chambers, Thomas Cochrane, Martin M. Black, Graham Jackson*

354 **Assessment of Right Ventricular Anatomy and Function by Quantitative Radionuclide Ventriculography.** *Scott J. Ratner, Por J. Huang, Marvin I. Friedman, Richard N. Pierson, Jr.*

360 ***Editorial Comment*** **Right Ventricular Performance Assays: Slowly Coming of Age.** *Jack Ferlinz*

363 **New Percutaneous Transluminal Coronary Angioscope.** *Kyoichi Mizuno, Tunenori Arai, Kimio Satomura, Toshio Shibuya, Ko Arakawa, Yasuhiro Okamoto, Akira Miyamoto, Akira Kurita, Makoto Kikuchi, Haruo Nakamura, Atsushi Utsumi, Kiyoshi Takeuchi*

ELECTROPHYSIOLOGIC STUDIES

369 **Fractionated Endocardial Electrograms Are Associated With Slow Conduction in Humans: Evidence From Pace Mapping.** *William G. Stevenson, James N. Weiss, Isaac Wiener, S. Mitchell Rivitz, Koonlawee Nademanee, Thomas Klitzner, Lawrence Yeatman, Martin Josephson, Daniel Wohlgelernter*

377 **The Prognostic Significance of Quantitative Signal-Averaged Variables Relative to Clinical Variables, Site of Myocardial Infarction, Ejection Fraction and Ventricular Premature Beats: A Prospective Study.** *J. Anthony Gomes, Stephen L. Winters, Mellisa Martinson, Joseph Machac, Debra Stewart, Adria Targonski*

385 **Rapid Self-Terminating Ventricular Tachycardia Induced During Electrophysiologic Study: A Prospective Evaluation.** *Philip T. Sager, Robin A. Perlmutter, Lynda E. Rosenfeld, Craig A. McPherson, William P. Batsford*

391 **Concealed Anterograde Accessory Pathway Conduction During the Induction of Orthodromic Reciprocating Tachycardia.** *William H. Kou, Fred Morady, MacDonald Dick, Steven D. Nelson, Jeffrey M. Baerman*

REPORTS ON HYPERTENSION

399 **Pulsatile Diameter and Elastic Modulus of the Aortic Arch in Essential Hypertension: A Noninvasive Study.** *Richard N. Isnard, Bruno M. Pannier, Stéphane Laurent, Gérard M. London, Benoît Diebold, Michel E. Safar*

PEDIATRIC CARDIOLOGY

406 **Palliation of Complex Cardiac Anomalies With Subaortic Obstruction: New Operative Approach.** *Roberto Di Donato, Duccio C. Di Carlo, Salvatore Giannico, Carlo Marcelletti*

413 **Spectrum of Findings in a Family With Nonsyndromic Autosomal Dominant Supravalvular Aortic Stenosis: A Doppler Echocardiographic Study.** *Gregory J. Ensing, Michael A. Schmidt, Donald J. Hagler, Virginia V. Michels, Guy A. Carter, Robert H. Feldt*

REPORTS ON THERAPY

421 **Limited Usefulness of Intermittent Nitroglycerin Patches in Stable Angina.** *David D. Waters, Martin Juneau, Denis Gossard, Gaston Choquette, Myriam Brien*

426 ***Editorial Comment*** **Transdermal Nitroglycerin.** *C. Richard Conti*

428 **Effect of Cutaneous Nitroglycerin Patches on Coronary Artery Diameter: Issues Concerning Development of Tolerance.** *Abel E. Moreyra, John B. Kostis*

434 **Randomized, Double-Blind, Placebo-Controlled Trial of Tissue Plasminogen Activator in Unstable Angina.** *John M. Nicklas, Eric J. Topol, Nathan Kander, William W. O'Neill, Joseph A. Walton, Stephen G. Ellis, Laura Gorman, Bertram Pitt*

442 **Long-Term Results of Amiodarone Therapy in Patients With Recurrent Sustained Ventricular Tachycardia or Ventricular Fibrillation.** *John M. Herre, Mary Jane Sauve, Patricia Malone, Jerry C. Griffin, Ibrahim Helmy, Jonathan J. Langberg, Harold Goldberg, Melvin M. Scheinman*

REVIEWS

450 **Endothelial and Myocardial Injury During Ischemia and Reperfusion: Pathogenesis and Therapeutic Implications.** *Mervyn B. Forman, David W. Puett, Renu Virmani*

EXPERIMENTAL STUDIES

461 **Alterations in Diastolic Function in Response to Progressive Left Ventricular Hypertrophy.** *Pamela S. Douglas, Barbara Berko, Michael Lesh, Nathaniel Reichek*

468 **Assessment of Regional Myocardial Blood Flow With Myocardial Contrast Two-Dimensional Echocardiography.** *Sanjiv Kaul, Paul Kelly, Jonathan D. Oliner, William P. Glasheen, Mark W. Keller, Denny D. Watson*

483 **Influence of Loading Patterns on Peak Length-Tension Relation and on Relaxation in Cardiac Muscle.** *Thierry C. Gillebert, Stanislas U. Sys, Dirk L. Brutsaert*

491 **Catheter Ablation of Accessory Pathways Using Radiofrequency Energy in the Canine Coronary Sinus.** *Jonathan Langberg, Jerry C. Griffin, John M. Herre, Michael C. Chin, Maurice Lev, Saroja Bharati, Melvin M. Scheinman*

EDITORIALS

497 **Why Some Physicians Have Concerns About the Cholesterol Awareness Program.** *Eliot Corday, Lars Rydén*

503 **Diet and Cholesterol Guidelines and Coronary Heart Disease.** *Antonio M. Gotto, Jr.*

SPECIAL SECTIONS

508 **ACC News President's Page: Clinical Research in the United States—A Threatened Activity.** *Anthony N. DeMaria*

511 **Letters to the Editor**

FEBRUARY 1989 VOLUME 13 NUMBER 2 (SUPPLEMENT A)

Abstracts of Papers to be Presented at the 38th Annual Scientific Session of the American College of Cardiology, Anaheim, California, March 19–23, 1989

1A **Abstracts**

255A **Acknowledgments**

258A **Author Index**

270A **Subject Index**

MARCH 1, 1989 VOLUME 13 NUMBER 3

ACC ANNIVERSARY SEMINAR
Suzanne B. Knoebel, Guest Editor

513 **Changing Strategies in the Management of Heart Failure.** *Arnold M. Katz*

COOPERATIVE STUDIES

524 **Risk Factor Profiles of Patients With Sudden Cardiac Death and Death From Other Cardiac Causes: A Report From the Coronary Artery Surgery Study (CASS).** *David R. Holmes, Jr., Kathryn Davis, Bernard J. Gersh, Michael B. Mock, Mary B. Pettinger and the participants in the Coronary Artery Surgery Study (CASS)*

531 **Anomalous Coronary Arteries: Location, Degree of Atherosclerosis and Effect on Survival—A Report From the Coronary Artery Surgery Study.** *Roger L. Click, David R. Holmes, Jr., Ronald E. Vlietstra, Andrzej S. Kosinski, Richard A. Kronmal and the participants of the Coronary Artery Surgery Study (CASS)*

538 **Intravenous Diltiazem for Termination of Reentrant Supraventricular Tachycardia: A Placebo-Controlled, Randomized, Double-Blind, Multicenter Study.** *Edward C. Huycke, Ruey J. Sung, Virgil C. Dias, Simon Milstein, Robert J. Hariman, Edward V. Platia and the Multicenter Diltiazem PSVT Study Group*

CLINICAL STUDIES

545 **Hemodynamic Progression of Aortic Stenosis in Adults Assessed by Doppler Echocardiography.** *Catherine M. Otto, Alan S. Pearlman, Carolyn L. Gardner*

551 *Editorial Comment* **Aortic Stenosis: Most Cases No Longer Require Invasive Hemodynamic Study.** *Fletcher A. Miller, Jr.*

554 **Prospective Two-Dimensional Echocardiographic Evaluation of Left Ventricular Thrombus and Embolism After Acute Myocardial Infarction.** *Bodh I. Jugdutt, Chittur A. Sivaram, with the technical assistance of Christine Wortman, Cheryl Trudell, Patricia Penner*

565 *Editorial Comment* **Characterization of the Acute Left Ventricular Thrombus: Hermit or Nomad?** *David Drew Gutterman*

567 **Relation Between Exertional Ischemia and Prognosis in Mildly Symptomatic Patients With Single or Double Vessel Coronary Artery Disease and Left Ventricular Dysfunction at Rest.** *Gianfranco Mazzotta, Robert O. Bonow, Leonardo Pace, Erica Brittain, Stephen E. Epstein*

574 **Variability of Indexes for Myocardial Ischemia: A Comparison of Exercise Treadmill Test, Ambulatory Electrocardiographic Monitoring and Symptoms of Myocardial Ischemia.** *Koonlawee Nademanee, Peter D. Christenson, Vanida Intarachot, Helen A. Robertson, Freny Vaghaiwalla Mody*

580 **Hypertensive Hypertrophic Cardiomyopathy or Hypertrophic Cardiomyopathy With Hypertension?: A Study of 78 Patients.** *Roger Karam, Harry M. Lever, Bernadine P. Healy*

METHODS

585 **Quantitative Assessment of Mitral Regurgitation by Doppler Color Flow Imaging: Angiographic and Hemodynamic Correlations.** *Michael G. Spain, Mikel D. Smith, Paul A. Grayburn, Edward A. Harlamert, Anthony N. DeMaria, with the technical assistance of Mary O'Brien, Oi Ling Kwan*

591 *Editorial Comment* **Quantitative Assessment of Mitral Regurgitation.** *Pravin M. Shah*

594 **Reassessment of Valve Area Determinations in Mitral Stenosis by the Pressure Half-Time Method: Impact of Left Ventricular Stiffness and Peak Diastolic Pressure Difference.** *Kjell Karp, Dag Teien, Per Bjerle, Peter Eriksson*

600 **Improved Diagnostic Performance of Exercise Thallium-201 Single Photon Emission Computed Tomography Over Planar Imaging in the Diagnosis of Coronary Artery Disease: A Receiver Operating Characteristic Analysis.** *Dan J. Fintel, Jonathan M. Links, Jeffrey A. Brinker, Terry L. Frank, Michele Parker, Lewis C. Becker*

613 *Editorial Comment* **Comparison of Planar and Tomographic Exercise Thallium-201 Imaging Methods for the Evaluation of Coronary Artery Disease.** *Hosen Kiat, Daniel S. Berman, Jamshid Maddahi*

617 **Pulsed Doppler Evaluation of Atrial Mechanical Function After Electrical Cardioversion of Atrial Fibrillation.** *Warren J. Manning, David E. Leeman, Patricia J. Gotch, Patricia C. Come*

624 **Gender-Related Differences in Cardiac Response to Supine Exercise Assessed by Radionuclide Angiography.** *Peter C. Hanley, Alan R. Zinsmeister, Ian P. Clements, Alfred A. Bove, Manuel L. Brown, Raymond J. Gibbons*

630 **Assessment of Right Atrial Pressure-Volume Relations in Patients With and Without an Atrial Septal Defect.** *James J. Ferguson III, Michael J. Miller, Julian M. Aroesty, Peter Sahagian, William Grossman, Raymond G. McKay*

ELECTROPHYSIOLOGIC STUDIES

637 **Predictors of Inducible Sustained Ventricular Tachyarrhythmias in Patients With Coronary Artery Disease.** *Vicken R. Vorperian, Allan M. Gittelsohn, Enrico P. Veltri*

646 **Changes in Spontaneous Sinus Node Rate as an Estimate of Cardiac Autonomic Tone During Stable and Unstable Ventricular Tachycardia.** *Heikki V. Huikuri, Liagat Zaman, Agustin Castellanos, Kenneth M. Kessler, Marilyn Cox, Frances Glicksman, Robert J. Myerburg*

REPORTS ON THERAPY

653 **Beneficial Effects of Long-Term Diltiazem Treatment in Dilated Cardiomyopathy.** *Hans R. Figulla, Jörg V. Rechenberg, Volker Wiegand, Reinhild Soballa, Heinrich Kreuzer*

659 **Combination of Disopyramide and Mexiletine for Better Tolerance and Additive Effects for Treatment of Ventricular Arrhythmias.** *Soo G. Kim, Anthony D. Mercando, Steve Tam, John D. Fisher*

665 **Determinants of Restenosis and Lack of Effect of Dietary Supplementation With Eicosapentaenoic Acid on the Incidence of Coronary Artery Restenosis After Angioplasty.** *Leeanne E. Grigg, Thomas W.H. Kay, Peter A. Valentine, Richard Larkins, Dorothy J. Flower, Emmanuel G. Manolas, Kerin O'Dea, Andrew J. Sinclair, John L. Hopper, David Hunt*

PEDIATRIC CARDIOLOGY

673 **Contrast Two-Dimensional Echocardiography in Congential Heart Disease: Techniques, Indications and Clinical Utility.** *George F. Van Hare, Norman H. Silverman*

687 *Editorial Comment* **Contrast Echocardiography in the Doppler Color Flow Imaging Era.** *Richard S. Meltzer, Shimon A. Reisner*

689 **Angiographic Follow-Up After Balloon Angioplasty for Coarctation of the Aorta.** *Jose Suarez De Lezo, Manuel Sancho, Manuel Pan, Miguel Romero, Carmen Olivera, Manuel Luque*

696 *Editorial Comment* **Coarctation and Balloons: Inflated or Realistic?** *Samuel B. Ritter*

700 **Doppler Echocardiographic Evaluation of Right and Left Ventricular Diastolic Function in Normal Neonates.** *Thomas W. Riggs, Ricardo Rodriguez, A. Rebecca Snider, Daniel Batton, With the Technical Assistance of James Pollock, Elease J. Sharp*

SEMINAR ON IN VITRO STUDIES OF CARDIAC FLOW AND THEIR APPLICATIONS FOR CLINICAL DOPPLER ECHOCARDIOGRAPHY—III

David J. Sahn, Ajit P. Yoganathan, Guest Editors

706 **Pressure Recovery Distal to a Stenosis: Potential Cause of Gradient "Overestimation" by Doppler Echocardiography.** *Robert A. Levine, A. Jimoh, Edward G. Cape, Scott McMillan, Ajit P. Yoganathan, Arthur E. Weyman*

716 **Lessons From In Vitro Models of Small, Irregular, Multiple and Tunnel-Like Stenoses Relevant to Clinical Stenoses of Valves and Small Vessels.** *Richard L. Popp and Igal Teplitsky*

EXPERIMENTAL STUDIES

723 **Effect of Postextrasystolic Potentiation of Systolic Bulging of Ischemic Myocardium.** *Shigetaka Noma, Alan D. Askenase, Richard H. Helfant*

730 **Evolution of the Temporal Contraction Sequence After Acute Experimental Myocardial Infarction.** *Kathryn J. Ascah, Linda D. Gillam, Ravin Davidoff, Thomas D. Franklin, John B. Newell, Robert D. Hogan, Arthur E. Weyman*

737 *Editorial Comment* **Contraction Pattern Within Ischemic-Infarct Zones in Acute Myocardial Infarction.** *Richard Grose*

739 **Demonstration of Increased Myocardial Lipid With Postischemic Dysfunction ("Myocardial Stunning") by Proton Nuclear Magnetic Resonance Spectroscopy.** *Russell C. Reeves, William T. Evanochko, Robert C. Canby, Jeanie B. McMillin, Gerald M. Pohost*

745 **Sustained Nonoxidative Glucose Utilization and Depletion of Glycogen in Reperfused Canine Myocardium.** *Markus Schwaiger, Richard A. Neese, Louis Araujo, William Wyns, Judith A. Wisneski, Heinz Sochor, Stanley Swank, David Kulber, Carl Selin, Michael Phelps, Heinrich R. Schelbert, Michael C. Fishbein, Edward W. Gertz, with the technical assistance of Herbert Hansen*

755 **Serotonin S_2 and Thromboxane A_2-Prostaglandin H_2 Receptor Blockade Provide Protection Against Epinephrine-Induced Cyclic Flow Variations in Severely Narrowed Canine Coronary Arteries.** *Juliet H. Ashton, Paolo Golino, Janice M. McNatt, L.M. Buja, James T. Willerson*

EDITORIALS

764 **The Need for Clarification of Percent Risk Reduction Data in Clinical Cardiovascular Trial Reports.** *Arnold M. Weissler, Brian I. Miller, Harisios Boudoulas*

ACC NEWS

767 **President's Page: Reaction to the Harvard–American Medical Association Resource-Based Relative Value Scale.** *Anthony N. DeMaria*

769 **Sir James Black, FRS, FRCP, FACC: Nobel Laureate 1988.** *Frits L. Meijler*

MARCH 15, 1989 VOLUME 13 NUMBER 4

ACC ANNIVERSARY SEMINAR
Suzanne B. Knoebel, Guest Editor

771 **Pathophysiology and Current Therapy of Congestive Heart Failure.** *William W. Parmley*

COOPERATIVE STUDIES

786 **Intermittent Transdermal Nitroglycerin Therapy in the Treatment of Chronic Stable Angina.** *Henry DeMots, Stephen P. Glasser, on behalf of the Transderm-Nitro Trial Study Group*

794 ***Editorial Comment*** **Intermittent Transdermal Nitroglycerin Therapy in the Treatment of Chronic Stable Angina.** *John O. Parker*

CLINICAL STUDIES

796 **Mild Mitral Insufficiency Is a Marker of Impaired Left Ventricular Performance in Aortic Stenosis.** *Douglas S. Schulman, Michael S. Remetz, John Elefteriades, Charles K. Frances*

802 ***Editorial Comment*** **Is Mitral Regurgitation a Useful Marker of Left Ventricular Deterioration in Aortic Stenosis?** *Arthur C. Fox*

804 **Significance of Hyperventilation-Induced ST Segment Depression in Patients With Coronary Artery Disease.** *Diego Ardissino, Stefano De Servi, Paolo Barberis, Gloria Demicheli, Colomba Falcone, Michael Ochan, Giuseppe Specchia, Carlo Montemartini*

811 **Familial Aortic Dissecting Aneurysm.** *Pascal Nicod, Colin Bloor, Maurice Godfrey, David Hollister, Reed E. Pyeritz, Howard Dittrich, Ralf Polikar, Kirk L. Peterson*

820 **Relation Between Extent of Left Ventricular Hypertrophy and Age In Hypertrophic Cardiomyopathy.** *Paolo Spirito, Barry J. Maron*

METHODS

825 **Use of Pulmonary Capillary Wedge Pressure to Assess Severity of Mitral Stenosis: Is True Left Atrial Pressure Needed in This Condition?** *Richard A. Lange, Donald M. Moore, Jr, Ricardo G. Cigarroa, L. David Hillis*

830 ***Editorial Comment*** **The Lessons of History as Reflected in the Pulmonary Capillary Wedge Pressure** *Joseph S. Alpert*

832 **Feasibility of Identifying Amyloid and Hypertrophic Cardiomyopathy With the Use of Computerized Quantitative Texture Analysis of Clinical Echocardiographic Data.** *Krishnaswamy Chandrasekaran, Philip E. Aylward, Steven R. Fleagle, Trudy L. Burns, James B. Seward, A. Jamil Tajik, Steve M. Collins, David J. Skorton*

841 **Dipyridamole Radionuclide Ventriculography: A Test With High Specificity for Severe Coronary Artery Disease.** *Christopher U. Cates, Marvin W. Kronenberg, H. Wade Collins, Martin P. Sandler*

852 **Quantitative Assessment of the Immediate Results of Coronary Angioplasty by Myocardial Contrast Echocardiography.** *Shimon A. Reisner, Ling S. Ong, Gerson S. Lichtenberg, Janine R. Shapiro, Antonio F. Amico, Mark N. Allen, Richard S. Meltzer*

857 ***Editorial Comment*** **Myocardial Contrast Echocardiography: A Light in the (Heart of) Darkness.** *Randolph P. Martin*

860 **Impaired Coronary Vasodilator Reserve in the Immediate Postcoronary Angioplasty Period: Analysis of Coronary Artery Flow Velocity Indexes and Regional Cardiac Venous Efflux.** *Morton J. Kern, Ubeydullah Deligonul, Michel Vandormael, Arthur Labovitz, Calapathirao V. Gudipati, Gregory Gabliani, Joseph Bodet, Yogesh Shah, Harold L. Kennedy*

873 **Flow Characteristics in the Dilated Left Ventricle With Thrombus: Qualitative and Quantitative Doppler Analysis.** *Seymour S. Maze, Morris N. Kotler, Wayne R. Parry*

882 **The Scintigraphic Characteristics of Ventricular Pre-excitation Through Mahaim Fibers With the Use of Phase Analysis.** *Norberto Schechtmann, Elias H. Botvinick, Michael Dae, Melvin M. Scheinman, J. William O'Connell, Jesse Davis, Stuart Winston, Allan Schwartz, Joseph Abbott*

ELECTROPHYSIOLOGIC STUDIES

893 **Electrocardiographic Localization of the Site of Origin of Ventricular Tachycardia in Patients With Prior Myocardial Infarction.** *Dennis L. Kuchar, Jeremy N. Ruskin, Hasan Garan*

901 ***Editorial Comment*** **Surface Electrocardiography: Can Arrhythmia Circuits Be Localized?** *Dennis M. Cassidy, Michael E. Cain*

904 **Treatment of Atrioventricular Node Reentrant Tachycardia With Encainide: Reversal of Drug Effect With Isoproterenol.** *Imran Niazi, Gerald Naccarelli, Ann Dougherty, Robert Rinkenberger, Patrick Tchou, Masood Akhtar*

911 **Ventricular Fibrillation in Six Adults Without Overt Heart Disease.** *Robert Lemery, Pedro Brugada, Paolo Della Bella, Thierry Dugernier, Hein J. J. Wellens*

CARDIAC PACING

917 **Pacemaker-Implantation Complication Rates: An Analysis of Some Contributing Factors.** *Victor Parsonnet, Alan D. Bernstein, Bruce Lindsay*

PEDIATRIC CARDIOLOGY

922 **Recognition of Abnormal Connections of Coronary Arteries With the Use of Doppler Color Flow Mapping.** *Stephen P. Sanders, Ira A. Parness, Steven D. Colan*

EXPERIMENTAL STUDIES

927 **Hemodynamic Effects of Nitroglycerin in an Experimental Model of Acute Aortic Regurgitation.** *Harald H. Klepzig, Kenneth G. Warner, Samer Y. Siouffi, Assad J. Saad, Amy Hayes, Martin Kaltenbach, Shukri F. Khuri*

936 **Atrial Natriuretic Peptide Levels During and After Acute Cardiac Tamponade in Dogs.** *Harilaos Zioris, Panayotis Karayannacos, Cherry Zerva, Vassiliki Alevizou-Terzaki, Fotis Pavlatos, Gregory Skalkeas*

941 **Extracellular Potassium Ion Dynamics and Ventricular Arrhythmias in the Canine Heart.** *Amir Pelleg, Hideo Mitamura, Rohn Price, Elieser Kaplinsky, Hyman Menduke, Leonard S. Dreifus, Eric L. Michelson*

SPECIAL SECTIONS

951 **ACC News Newly Elected Members of the College**

955 **Letters to the Editor**

APRIL 1989 VOLUME 13 NUMBER 5

ACC ANNIVERSARY SEMINAR
Suzanne B. Knoebel, Guest Editor

957 **Treatment of Coronary Artery Disease.** *Robert L. Frye, Raymond J. Gibbons, Hartzell V. Schaff, Ronald E. Vlietstra, Bernard J. Gersh, Michael B. Mock*

969 **"Crackers, Breakers, Stretchers, Drillers, Scrapers, Shavers, Burners, Welders and Melters"—The Future Treatment of Atherosclerotic Coronary Artery Disease? A Clinical-Morphologic Assessment.** *Bruce F. Waller*

COOPERATIVE STUDIES

988 **Multicenter Trial of Intravenous Anisoylated Plasminogen Streptokinase Activator Complex (APSAC) in Acute Myocardial Infarction: Effects on Infarct Size and Left Ventricular Function.** *Jean-Pierre Bassand, Jacques Machecourt, Jean Cassagnes, Thierry Anguenot, René Lusson, Elisabeth Borel, Patricia Peycelon, Etienne Wolf, Dominique Ducellier, for the APSIM Study Investigators*

998 **Quantitative Radionuclide Assessment of Regional Ventricular Function After Thrombolytic Therapy for Acute Myocardial Infarction: Results of Phase I Thrombolysis in Myocardial Infarction (TIMI) Trial.** *Frans J. Th. Wackers, Michael L. Terrin, David S. Kayden, Genell Knatterud, Sandra Forman, Eugene Braunwald, Barry L. Zaret, and the TIMI Investigators*

CLINICAL STUDIES

1007 **Differentiation of Restrictive Cardiomyopathy From Pericardial Constriction: Assessment of Diastolic Function by Radionuclide Angiography.** *Constantine N. Aroney, Terrence D. Ruddy, Humberto DiGhero, Michael A. Fifer, Charles A. Boucher, Igor F. Palacios*

1015 ***Editorial Comment*** **Noninvasive Evaluation of Diastolic Function: Need for Hemodynamically and Clinically Relevant Variables.** *Gary D. Plotnick, Robert A. Vogel*

1017 **Doppler Characterization of Left Ventricular Diastolic Function in Cardiac Amyloidosis.** *Allan L. Klein, Liv K. Hatle, Darryl J. Burstow, James B. Seward, Robert A. Kyle, Kent R. Bailey, Thomas F. Luscher, Morie A. Gertz, A. Jamil Tajik*

1027 ***Editorial Comment*** **Echocardiographic Evaluation of Left Ventricular Diastolic Function.** *Harvey Feigenbaum*

1030 **Cardiac Manifestations of Human Immunodeficiency Virus Infection: A Two-Dimensional Echocardiographic Study.** *Ronald B. Himelman, William S. Chung, David N. Chernoff, Nelson B. Schiller, Harry Hollander*

1037 ***Editorial Comment*** **Acquired Immune Deficiency Syndrome: The Heart of the Matter.** *Stephen M. Factor*

1039 **Percutaneous Aortic Balloon Valvuloplasty: Its Role in the Management of Patients With Aortic Stenosis Requiring Major Noncardiac Surgery.** *Robert B. Roth, Igor F. Palacios, Peter C. Block*

1042 **Effects of Pharmacologic Coronary Hyperemia on Echocardiographic Left Ventricular Function in Patients With Single Vessel Coronary Artery Disease.** *Morton J. Kern, Anthony C. Pearson, Arthur J. Labovitz, Ubeydullah Deligonul, Michel Vandormael, Chalapathirao Gudipati, with technical assistance of Denise Mrosek, Kathleen Habermehl*

METHODS

1053 **Temporal Resolution of Mitral Regurgitation in Patients With Mitral Valve Prolapse: A Phonocardiographic and Doppler Echocardiographic Study.** *Takashi Akasaka, Junichi Yoshikawa, Kiyoshi Yoshida, Yasuko Yamaura, Takeshi Hozumi*

1062 **Left Ventricular Pressure-Length Relation During Exercise-Induced Ischemia.** *Hiroshi Nonogi, Otto M. Hess, Alessandro S. Bortone, Manfred Ritter, John D. Carroll, Hans P. Krayenbuehl*

1071 *Editorial Comment* **Ischemia-Induced Diastolic Dysfunction: New Observations, New Questions.** *Mark A. Greenberg, Mark A. Menegus*

1073 **Exercise Ultrafast Computed Tomography for the Detection of Coronary Artery Disease.** *Eulalia Roig, Eva V. Chomka, Angel Castaner, Adalberto Campo, Magda Heras, Stuart Rich, Bruce H. Brundage*

1082 *Editorial Comment* **Exercise Ultrafast Computed Tomography: Preliminary Findings on Its Role in Diagnosis and Prognosis of Coronary Artery Disease.** *Martin J. Lipton, John A. Rumberger*

1085 **Intravascular Stenting for Stenosis of Aortocoronary Venous Bypass Grafts.** *Philip Urban, Ulrich Sigwart, Svein Golf, Urs Kaufmann, Hossein Sadeghi, Lukas Kappenberger*

1092 *Editorial Comment* **Intravascular Stenting for Prevention of Restenosis: In Search of the Magic Bullet.** *Frank Litvack*

1094 **Importance of Balloon Size in Coronary Angioplasty.** *Allen B Nichols, Rachel Smith, Andrew D. Berke, Richard A. Shlofmitz, Eric R. Powers*

PEDIATRIC CARDIOLOGY

1101 **Percutaneous Balloon Valvuloplasty in Neonates With Critical Aortic Stenosis.** *Carol H. Kasten-Sportes, Jean-François Piechaud, Daniel Sidi, Jean Kachaner*

1106 **Balloon Valvuloplasty for Recurrent Aortic Stenosis After Surgical Valvotomy in Childhood: Immediate and Follow-Up Studies.** *Jon N. Meliones, Robert H. Beekman, Albert P. Rocchini, Samuel J. Lacina*

1111 **Elucidation of the Natural History of Ventricular Septal Defects by Serial Doppler Color Flow Mapping Studies.** *Lisa K. Hornberger, David J. Sahn, Kimberly A. Krabill, Frederick S. Sherman, Richard E. Swensson, Erkki Pesonen, Sandy Hagen-Ansert, Kyung J. Chung*

1119 *Editorial Comment* **Doppler Color Flow Mapping and Prediction of Ventricular Septal Defect Outcome.** *Roberta G. Williams*

REPORTS ON THERAPY

1122 **Coronary Angioplasty As Primary Therapy for Acute Myocardial Infarction 6 to 48 Hours After Symptom Onset: Report of an Initial Experience.** *Stephen G. Ellis, William W. O'Neill, Eric R. Bates, Joseph A. Walton, Elizabeth G. Nabel, Eric J. Topol*

1127 *Editorial Comment* **Coronary Angioplasty in Acute Myocardial Infarction: Should it be Done? To Whom? When?** *Adolph M. Hutter, Jr.*

1130 *Editorial Comment* **Myocardial Reperfusion: Is It Ever Too Late?** *Robert M. Califf*

1133 **Acute Effect of Disopyramide on Atrial Fibrillation in the Wolff-Parkinson-White Syndrome.** *Osamu Fujimura, George J. Klein, Arjun D. Sharma, Raymond Yee, Tibor Szabo*

1138 **Increased Exercise Capacity After Digoxin Administration in Patients With Heart Failure.** *Michael Sullivan, J. Edwin Atwood, Jonathan Myers, Joshua Feuer, Patrick Hall, Barbara Kellerman, Susan Forbes, Victor Froelicher*

REVIEWS

1144 **Cardiac Complications in Acquired Immunodeficiency Syndrome (AIDS): A Review.** *Louis J. Acierno*

EXPERIMENTAL STUDIES

1155 **Neutrophil Depletion Does Not Prevent Myocardial Dysfunction After Brief Coronary Occlusion.** *Richmond W. Jeremy, Lewis C. Becker*

1164 *Editorial Comment* **Do Neutrophils Mediate the Phenomenon of Stunned Myocardium?** *Robert A. Kloner*

1167 **Thermal Compression and Molding of Atherosclerotic Vascular Tissue With Use of Radiofrequency Energy: Implications for Radiofrequency Balloon Angioplasty.** *Benjamin I. Lee, Gary J. Becker, Bruce F. Waller, Kevin J. Barry, Raymond J. Connolly, Jonathan Kaplan, Alan R. Shapiro, Paul C. Nardella*

1176 **Nifedipine Administered After Reperfusion Ablates Systolic Contractile Dysfunction of Postischemic "Stunned" Myocardium.** *Karin Przyklenk, Georges B. Ghafari, Daniel T. Eitzman, Robert A. Kloner*

1184 **Changes in Expired End-Tidal Carbon Dioxide During Cardiopulmonary Resuscitation in Dogs: A Prognostic Guide for Resuscitation Efforts.** *Karl B. Kern, Arthur B. Sanders, William D. Voorhees, Charles F. Babbs, Willis A. Tacker, Gordon A. Ewy*

1190 **Concentration Dependence of Class III and Beta-Adrenergic Blocking Effects of Sotalol in Anesthetized Dogs.** *Stanley Nattel, Randi Feder-Elituv, Carol Matthews, Mohsen Nayebpour, Mario Talajic*

SEMINAR ON IN VITRO STUDIES OF CARDIAC FLOW AND THEIR APPLICATIONS FOR CLINICAL DOPPLER ECHOCARDIOGRAPHY—IV

David J. Sahn, Ajit P. Yoganathan, Guest Editors

1195 **Doppler Color Flow Mapping of Simulated In Vitro Regurgitant Jets: Evaluation of the Effects of Orifice Size and Hemodynamic Variables.** *Iain A. Simpson, Lilliam M. Valdes-Cruz, David J. Sahn, Azucena Murillo, Tadashi Tamura, Kyung J. Chung*

SPECIAL SECTIONS

ACC News

1208 **President's Page: Convocation Remarks** *C. Richard Conti*

1211 **Past President's Page: The Increasing Importance of a Cardiovascular Society** *Anthony N. DeMaria*

1214 **1989–1990 Board of Governors**

1216 **Letters to the Editor**

1218 **Correction**

MAY 1989 VOLUME 13 NUMBER 6

ACC ANNIVERSARY SEMINAR
Suzanne B. Knoebel, Guest Editor

1219 **The Challenge of Cardiomyopathy.** *Walter H. Abelmann, Beverly H. Lorell*

COOPERATIVE STUDIES

1240 **Short- and Long-Acting Angiotensin-Converting Enzyme Inhibitors: A Randomized Trial of Lisinopril Versus Captopril in the Treatment of Congestive Heart Failure.** *Thomas D. Giles, Richard Katz, Jay M. Sullivan, Paul Wolfson, Mark Haugland, Philip Kirlin, Eric Powers, Stuart Rich, Barry Hackshaw, Anthony Chiaramida, J. L. Rouleau, Mary B. Fisher, Joseph Pigeon, Janet E. Rush, for the Multicenter Lisinopril-Captopril Congestive Heart Failure Study Group*

1248 *Editorial Comment* **Angiotensin-Converting Enzyme Inhibitors: Are There Significant Clinical Differences?** *Mariell Jessup*

CLINICAL STUDIES

1251 **Implications for Patient Triage From Survival and Left Ventricular Functional Recovery Analyses in 500 Patients Treated With Coronary Angioplasty for Acute Myocardial Infarction.** *Stephen G. Ellis, William W. O'Neill, Eric R. Bates, Joseph A. Walton, Jr., Elizabeth G. Nabel, Steven W. Werns, Eric J. Topol*

1260 *Editorial Comment* **More on the Saga of Routine Emergency Coronary Angioplasty for Acute Myocardial Infarction.** *Bernard R. Chaitman*

1262 **Acute Changes in Global and Regional Rest Left Ventricular Function After Successful Coronary Angioplasty: Comparative Results in Stable and Unstable Angina.** *Eric B. Carlson, Michael J. Cowley, Timothy C. Wolfgang, George W. Vetrovec*

1270 **Significance of "Reciprocal" ST Segment Depression: Left Ventriculographic Observations During Left Anterior Descending Coronary Angioplasty.** *Michael S. Norell, John P. Lyons, John E. Gardener, Clive A. Layton, Raphael Balcon*

1275 **Causal Relation Between the Pressure Gradient and Left Ventricular Ejection Time in Hypertrophic Cardiomyopathy.** *Zion Sasson, Mark Henderson, Susan Wilansky, Harry Rakowski, E. Douglas Wigle*

1280 *Editorial Comment* **Left Ventricular Ejection Dynamics and Outflow Obstruction in Hypertrophic Cardiomyopathy.** *Robert O. Bonow*

1283 **Long-Term Outcome of Patients With Hypertrophic Cardiomyopathy Successfully Resuscitated After Cardiac Arrest.** *Franco Cecchi, Barry J. Maron, Stephen E. Epstein*

1289 **High Prevalence of Myocardial Monoclonal Antimyosin Antibody Uptake in Patients With Chronic Idiopathic Dilated Cardiomyopathy.** *Damià Obrador, Manel Ballester, Ignasi Carrió, Luis Bernà, Guillem Pons-Lladó*

METHODS

1294 **Noninvasive Evaluation of Global Left Ventricular Function With Use of Cine Nuclear Magnetic Resonance.** *Peter T. Buser, Wolfgang Auffermann, William W. Holt, Stephan Wagner, Barbara Kircher, Christopher Wolfe, Charles B. Higgins*

1301 **Relation Between Myocardial Thallium-201 Kinetics During Exercise and Quantitative Coronary Angiography in Patients With One Vessel Coronary Artery Disease.** *Stavros Hadjimiltiades, Robert Watson, A-Hamid Hakki, Jaekyeong Heo, Abdulmassih S.Iskandrian*

1309 **Reliability of the Doppler Pressure Half-Time Method for Assessing Effects of Percutaneous Mitral Balloon Valvuloplasty.** *Chunguang Chen, Yipo Wang, Benliao Guo, Yushan Lin*

PEDIATRIC CARDIOLOGY

1314 **Supernormal Ejection Performance Is Isolated to the Ipsilateral Congenitally Pressure-Overloaded Ventricle.** *Robert B. Leman, Francis G. Spinale, Gerald W. Dorn II, George Cooper IV, James F. Spann, Jr., Paul C. Gillette, Blase A. Carabello*

1320 **Two-Dimensional and Doppler Echocardiographic Assessment of Neonatal Arterial Repair for Transposition of the Great Arteries.** *Marie Murphy Gleason, Alvin J. Chin, Beth Aglira Andrews, Gerald Barber, J. Gregg Helton, John D. Murphy, William I. Norwood*

PLENARY LECTURE

1329 **Cardiac Electrophysiology: Promises and Contributions.** *Douglas P. Zipes*

CARDIAC PACING

1353 **Long-Term Outcome With the Automatic Implantable Cardioverter-Defibrillator.** *Roger A. Winkle, R. Hardwin Mead, Michael A. Ruder, Vincent A. Gaudiani, Nellis A. Smith, Wally S. Buch, Paula Schmidt, Tamara Shipman*

1362 **A Prospective, Randomized Evaluation of Effect of Ventricular Fibrillation Duration on Defibrillation Thresholds in Humans.** *Gust H. Bardy, Tom D. Ivey, Margaret Allen, George Johnson*

REPORTS ON THERAPY

1367 **Prophylactic Automatic Implantable Cardioverter-Defibrillator Patches in Patients at High Risk for Postoperative Ventricular Tachyarrhythmias.** *Antonis S. Manolis, Hassan Rastegar, N. A. Mark Estes III*

1374 *Editorial Comment* **Surgical Ablative Therapy for Life-Threatening Ventricular Tachyarrhythmias: An Evolutionary Process.** *Allan M. Greenspan*

REPORTS ON HYPERTENSION

1377 **Pathophysiologic Assessment of Left Ventricular Hypertrophy and Strain in Asymptomatic Patients With Essential Hypertension.** *Stuart D. Pringle, Peter W. Macfarlane, James H. McKillop, A. Ross Lorimer, Francis G. Dunn*

EXPERIMENTAL STUDIES

1382 **Instantaneous and Continuous Cardiac Output Obtained With a Doppler Pulmonary Artery Catheter.** *Jerome Segal, Ronald G. Pearl, Andrew J. Ford, Jr., Roger A. Stern, Steven M. Gehlbach*

1393 *Editorial Comment* **Another Measurement of Cardiac Output: Is It Truly Needed?** *Rick A. Nishimura*

1395 **Treatment of Reperfusion Injury With Intracoronary Calcium Channel Antagonists and Reduced Coronary Free Calcium Concentration in Regionally Ischemic, Reperfused Porcine Hearts.** *Hermann H. Klein, Sibylle Pich, Stefanie Lindert, Klaus Nebendahl, Gerhard Warneke, Heinrich Kreuzer*

1402 **Hypercholesterolemia Causes Generalized Impairment of Endothelium-Dependent Relaxation to Aggregating Platelets in Porcine Arteries.** *Hiroaki Shimokawa, Paul M. Vanhoutte*

1409 **A Canine Model of Coronary Artery Thrombosis With Superimposed High Grade Stenosis for the Investigation of Rethrombosis After Thrombolysis.** *Tsunehiro Yasuda, Herman K. Gold, John T. Fallon, Robert C. Leinbach, Harry D. Garabedian, J. Luis Guerrero, Desire Collen*

CASE REPORTS

1415 **Myocardial Stunning in Hypertrophic Cardiomyopathy: Recovery Predicted by Single Photon Emission Computed Tomographic Thallium-201 Scintigraphy.** *David G. Fine, Ian P. Clements, Mark J. Callahan*

1419 *Editorial Comment* **Myocardial Stunning in Hypertrophic Cardiomyopathy?** *André Pasternac*

1422 **Ventricular Entrapment of a Swan-Ganz Catheter: A Technique for Nonsurgical Removal.** *Charles Lazzam, Timothy A. Sanborn, Ferdinand Christian, Jr.*

EDITORIAL REVIEWS

1425 **Intracoronary Stents: Will They Fulfill Their Promise as an Adjunct to Angioplasty?** *Stephen G. Ellis, Eric J. Topol*

EDITORIALS

1431 **Does Thrombolytic Therapy Reduce Infarct Size?** *Arthur Selzer*

1435 **Acute Myocardial Infarction: A Failure of Timely, Spontaneous Thrombolysis.** *H. J. C. Swan*

SEMINAR ON IN VITRO STUDIES OF CARDIAC FLOW AND THEIR APPLICATIONS FOR CLINICAL DOPPLER ECHOCARDIOGRAPHY—V
David J. Sahn, Ajit P. Yoganathan, Guest Editors

1438 **Chordal Geometry Determines the Shape and Extent of Systolic Anterior Mitral Motion: In Vitro Studies.** *Edward G. Cape, Dianne Simons, A. Jimoh, Arthur E. Weyman, Ajit P. Yoganathan, Robert A. Levine*

SPECIAL SECTIONS

1449 **ACC News President's Page: The American College of Cardiology and Ethics in Cardiovascular Medicine.** *C. Richard Conti*

1451 **Letters to the Editor**

JUNE 1989 VOLUME 13 NUMBER 7

ACC ANNIVERSARY SEMINAR
Suzanne B. Knoebel, Guest Editor

1453 **Growth and Development of State of the Art Care for People With Congenital Heart Disease.** *Mary Allen Engle*

1458 **Genetics and Congential Heart Disease: Perspectives and Prospects.** *Reed E. Pyeritz, Edmond A. Murphy*

COOPERATIVE STUDIES

1469 **Tissue Plasminogen Activator: Toronto (TPAT) Placebo-Controlled Randomized Trial in Acute Myocardial Infarction.** *Paul W. Armstrong, Ronald S. Baigrie, Paul A. Daly, Aminul Haq, Michael Gent, Robin S. Roberts, Michael R. Freeman, Robert Burns, Peter Liu, Christopher D. Morgan*

1477 *Editorial Comment* **Tissue Plasminogen Activator: Why the Backlash?** *Eric J. Topol, Robert M. Califf*

1481 **Morphology of Left Anterior Descending Coronary Territory Lesions as a Predictor of Anterior Myocardial Infarction: A CASS Registry Study.** *Stephen Ellis, Edwin L. Alderman, Kevin Cain, Allan Wright, Martial Bourassa, Lloyd Fisher and the participants of the Coronary Artery Surgery Study (CASS)*

1492 *Editorial Comment* **Coronary Arteriographic Analysis and Angiographic Morphology.** *John A. Ambrose*

CLINICAL STUDIES

1495 **ST Segment Shift in Unstable Angina: Pathophysiology and Association With Coronary Anatomy and Hospital Outcome.** *Anatoly Langer, Michael R. Freeman, Paul W. Armstrong*

1503 *Editorial Comment* **Ischemia—Silent or Manifest: Does It Matter?** *Kanu Chatterjee*

1506 **Effects of Successful Intravenous Reperfusion Therapy on Regional Myocardial Function and Geometry in Humans: A Tomographic Assessment Using Two-Dimensional Echocardiography.** *Dale A. Touchstone, George A. Beller, Thomas W. Nygaard, Christine Tedesco, Sanjiv Kaul*

1514 **Left Ventricular Thrombus Incidence and Behavior Studied by Serial Two-Dimensional Echocardiography in Acute Anterior Myocardial Infarction: Left Ventricular Wall Motion, Systemic Embolism and Oral Anticoagulation.** *Albert J. Funke Küpper, Cathinka H. Peels, Freek W.A. Verheught, Tjebbe W. Galema, Jan P. Roos*

1521 **Determinants of Exercise Capacity in Hypertrophic Cardiomyopathy.** *Michael P. Frenneaux, Andrew Porter, Alida L.P. Caforio, Hiroaki Odawara, Peter J. Counihan, William J. McKenna*

1527 **Results of Operation for Coexistent Obstructive Hypertrophic Cardiomyopathy and Coronary Artery Disease.** *Ira L. Siegman, Barry J. Maron, Lester C. Permut, Charles L. McIntosh, Richard E. Clark*

1534 **Prognostic Importance of Atrial Natriuretic Peptide in Patients With Chronic Heart Failure.** *Stephen S. Gottlieb, Marrick L. Kukin, Deborah Ahern, Milton Packer*

1540 **Pulsed and Continuous Wave Doppler Echocardiographic Assessment of Valvular Regurgitation in Normal Subjects.** *Marvin Berger, Susan R. Hecht, Andrew Van Tosh, Umadevi Lingam*

METHODS

1547 **Laser-Assisted Thermal Angioplasty in Human Peripheral Artery Occlusions: Mechanism of Recanalization.** *Jonathan Tobis, Michael Smolin, John Mallery, Lachlan Macleay, Warren D. Johnston, John E. Connolly, George Lewis, Bob Zuch, Walter Henry, Michael Berns*

1555 ***Editorial Comment*** **Percutaneous Transluminal Angioplasty of Peripheral Vascular Occlusions: A Clinical Perspective.** *Lewis Wexler*

1558 ***Editorial Comment*** **Recanalization of Arterial Occlusions: Pathologic Basis and Contributing Factors.** *Timothy A. Sanborn*

1561 **Doppler Color Flow Mapping in the Evaluation of Prosthetic Mitral and Aortic Valve Function.** *Kanwal K. Kapur, PoHoey Fan, Navin C. Nanda, Ajit P. Yoganathan, Rajendra G. Goyal*

1572 **Noninvasive Diagnosis of Coronary Artery Fistula by Doppler Color Flow Mapping.** *Masahiro Shakudo, Junichi Yoshikawa, Kiyoshi Yoshida, Yasuko Yamaura*

PEDIATRIC CARDIOLOGY

1578 **Assessment of Right Ventricular Performance by Pulsed Doppler Echocardiography in Patients After Intraatrial Repair of Aortopulmonary Transposition in Infancy or Childhood.** *Klaus G. Schmidt, Jean-Louis Cloez, Norman H. Silverman*

1586 **Cardiac Malformations in Trisomy-18: A Study of 41 Postmortem Cases.** *Stella Van Praagh, Timothy Truman, Adolfo Firpo, Antonio Bano-Rodrigo, Ruthellen Fried, Bruce McManus, Mary Allen Engle, Richard Van Praagh*

ELECTROPHYSIOLOGIC STUDIES

1599 **Comparison of Immediate Versus Day to Day Variability of Ventricular Tachycardia Induction by Programmed Stimulation.** *Mark J. Cooper, Chee Choong Koo, Michael P. Skinner, Peter T. Mortensen, Lesley J. Hunt, David A. Richards, John B. Uther, David L. Ross*

1608 **Comparison of Endocardial and Epicardial Programmed Stimulation for the Induction of Ventricular Tachycardia.** *Sharon M. Dailey, G. Neal Kay, Andrew E. Epstein, David C. McGiffin, James K. Kirklin, Vance J. Plumb*

CARDIAC PACING

1613 **Hemodynamic Benefit of Atrioventricular Synchrony: Prediction From Baseline Doppler-Echocardiographic Variables.** *Anthony C. Pearson, Denise L. Janosik, Robert M. Redd, Thomas A. Buckingham, Arthur J. Labovitz, with the technical assistance of Denise Mrosek*

EXPERIMENTAL STUDIES

1622 **Left Heart Opacification With Peripheral Venous Injection of a New Saccharide Echo Contrast Agent in Dogs.** *Mikel D. Smith, Jonathan L. Elion, Rick R. McClure, Oi Ling Kwan, Anthony N. DeMaria, with the technical assistance of Joyce Evans and Thomas H. Fritzsch*

1629 ***Editorial Comment*** **Prospects for Transpulmonary Contrast Echocardiography.** *Janine R. Shapiro, Shimon A. Reisner, Richard S. Meltzer*

1631 **Sources of Variability for Doppler Color Flow Mapping of Regurgitant Jets in an Animal Model of Mitral Regurgitation.** *Brian D. Hoit, Michael Jones, Elling E. Eidbo, William Elias, David J. Sahn*

BASIC CONCEPTS IN CARDIOLOGY
Arnold M. Katz, Guest Editor

1637 **Cardiac Interstitium in Health and Disease: The Fibrillar Collagen Network.** *Karl T. Weber*

REVIEWS

1653 **Importance of Epidemiology and Biostatistics in Deciding Clinical Strategies for Using Diagnostic Tests: A Simplified Approach Using Examples From Coronary Artery Disease.** *Randolph E. Patterson, Steven F. Horowitz*

EDITORIALS

1666 **Thrombolysis in Unstable Angina: Will the Beneficial Effects of Thrombolytic Therapy in Myocardial Infarction Apply to Patients With Unstable Angina?** *John A. Ambrose, Dimitrios Alexopoulos*

SEMINAR ON IN VITRO STUDIES OF CARDIAC FLOW AND THEIR APPLICATIONS FOR CLINICAL DOPPLER ECHOCARDIOGRAPHY—VI
David J. Sahn, Ajit P. Yoganathan, Guest Editors

1672 **Factors Influencing the Structure and Shape of Stenotic and Regurgitant Jets: An In Vitro Investigation Using Doppler Color Flow Mapping and Optical Flow Visualization.** *Kimberly A. Krabill, Hsing-Wen Sung, Tadashi Tamura, Kyung J. Chung, Ajit P. Yoganathan, David J. Sahn*

1682 **Clinical Significance of In Vitro and In Vivo Experimental Findings Regarding Doppler Flow Velocity Recordings.** *Anthony N. DeMaria, Mikel D. Smith, Michael R. Harrison*

SPECIAL SECTIONS

1686 ACC News **President's Page: The American College of Cardiology, Cardiovascular Research and Research Careers.** *C. Richard Conti*

1688 ACC News **1989–1990 Committee Appointments**

1693 **Letters to the Editor**

1694 **Correction**

INDEXES

1695 **Author Index: Volume 13**

1698 **Subject Index: Volume 13**